OPEN THIS PACKAGE FIRST!

HEATHKIT CONTINUING EDUCATION

HOW TO ASSEMBLE AND USE YOUR INDIVIDUAL LEARNING PROGRAM

Model ER-3701 595-2008-01

Before you begin to use this Individual Learning Program you will need to assemble and organize it. The printed material, looseleaf binder, and audio cassettes have been packed to provide maximum protection during shipping. By assembling this material yourself, you will check to see that nothing is missing. At the same time, it will give you an opportunity to look over the program and become familiar with it.

Follow the step-by-step instructions below to assemble your program. Check off each step as you complete it. Then begin the program as indicated in the last step.

1. Be sure that you have received all of the materials. Your Individual Learning Program contains:

( ) One package of printed material wrapped in plastic.

( ) One looseleaf binder.

( ) One envelope containing charts.

( ) One envelope containing the final examination. **Do not open this envelope until you are directed to.**

( ) One cassette holder containing two cassettes.

( ) One envelope containing miscellaneous materials.

( ) One set of tab dividers.

2. Put the printed material and the tab dividers into the looseleaf binder. The printed material has already been collated in the proper sequence, but you will have to separate it and place it after the appropriate tab divider. Colored sheets have been placed between the different sections to help you separate them quickly, and there is a tab divider for each section. Place all of the introductory material in front of the tab divider for unit one.

3. Place the cassette holder in the front of the binder so the cassette tapes face the front cover.

4. Set the "Final Examination" envelope aside until it is called for. Do not open this envelope until you are directed to.

5. Begin your program. Start by playing Cassette 1, Side A. Then read the following Introduction.

INTRODUCTION

WHAT IS AMATEUR RADIO ALL ABOUT?

Imagine talking to people all over the world from your own home, That's what thousands of amateur radio, or "ham," operators do every day. You have already taken the first step in joining more than 500,000 other people in the world in a fascinating new hobby.

Amateur radio is many things to different people. In general, amateur radio is made up of people who want to use radio communication for pleasure, as a hobby, or for technical advancement.

Anyone can become a ham regardless of age, sex, or occupation. In fact, the Rules and Regulations were recently changed so you don't even have to be a citizen of the United States to be licensed here. During your first few on-the-air contacts with other amateurs, you may talk to a student, a well-known politician, a famous radio or television personality, or even the king of some far-away country.

Operating Variety

Amateur radio has something to offer for just about everyone. Some operators prefer to "work" (communicate with) as many different countries as they can while others prefer to just chit-chat (called "ragchewing") with someone who has similar interests.

All amateurs fall into two main groups; the CW (Morse code) operators and the phone (voice) operators. These two groups are further broken down into smaller groups made up of contest operators, award hunters, network and phone patch operators, satellite operators, and DX operators.

The first of these sub-groups (contest operators) is made up of amateurs who are interested in challenge. Throughout each year, there are several contests sponsored that improve an amateur's operating skill. These contests usually center around working as many other stations as possible.

The second sub-group is made up of amateurs who are interested in collecting awards. There are several awards available, usually in the form of a certificate, which any amateur can earn through operating persistence. The proof-of-contact for most awards is in the form of a verification, or QSL, card (see Figure 1).

Some amateurs, called network operators, transmit messages between their stations similar to the way telegrams are sent. Other amateurs, phone-patch operators, interconnect their stations with the telephone lines so a non-amateur friend can talk, via radio, to a friend or relative many miles away without leaving their homes.

Figure 1
QSL Card Display

Amateur radio operators even have their own satellites in orbit around the earth. These satellites provide communications over long distances with simple equipment. Currently, there are two of these amateur satellites in orbit which are called Oscar 6 and Oscar 7. Oscar is actually an abbreviation for "**O**rbiting **S**atellite **C**arrying **A**mateur **R**adio.

DX operators (DX means distant or distance) are mainly concerned with talking to amateurs in other countries all over the world. At present, amateurs in the United States have the privilege of talking to any other country in the world.

Two more sub-groups that don't fit the above groups are made up of RTTY (radioteletype) and amateur TV operators. RTTY is essentially a typewriter connected to a transmitter and receiver. When you press a key on the typewriter, a dot-dash type character is formed and is sent through your transmitter. When your receiver is tuned to an RTTY signal, the typewriter will type out whatever is being received. Some amateurs are even able to transmit pictures using RTTY (see Figure 2).

Another popular method of transmitting pictures is through slow-scan television (SSTV). This method requires a special type of camera and monitor that has a very slow (one picture takes eight seconds) scanning rate, as compared to ordinary television. Figure 3 shows a typical slow-scan television picture. In the past few years, several amateurs have been experimenting with color SSTV.

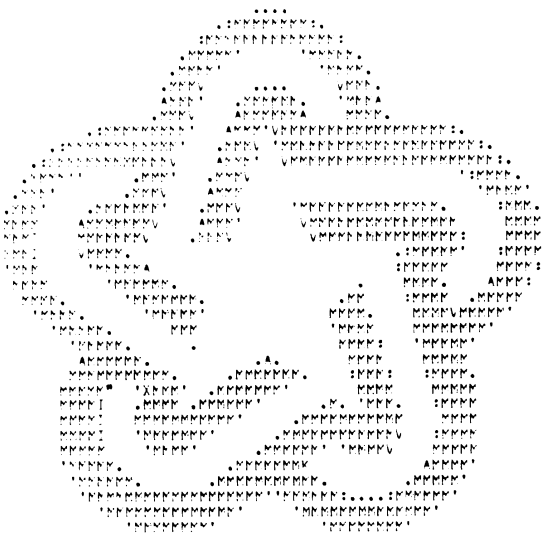

Figure 2

RTTY Picture

American Bicentennial
1776—1976
200 years of freedom
Created by Dick Peters
WAIPWF, Norfolk, Mass.

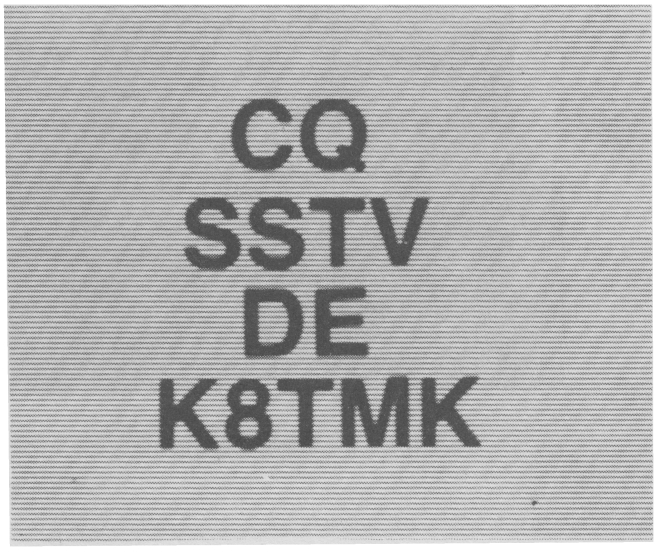

Figure 3

SSTV Picture

Station Variety

Amateur stations vary almost as much as operator preference. You can find amateur stations almost anywhere: in a home, office, car, boat, airplane, or even on a bicycle. Some amateurs install a simple station in a spare corner of a room while others may have elaborate stations taking up a whole room. Figure 4 shows a simple station that a beginner may use. Figure 5 shows an elaborate station that an experienced operator may own.

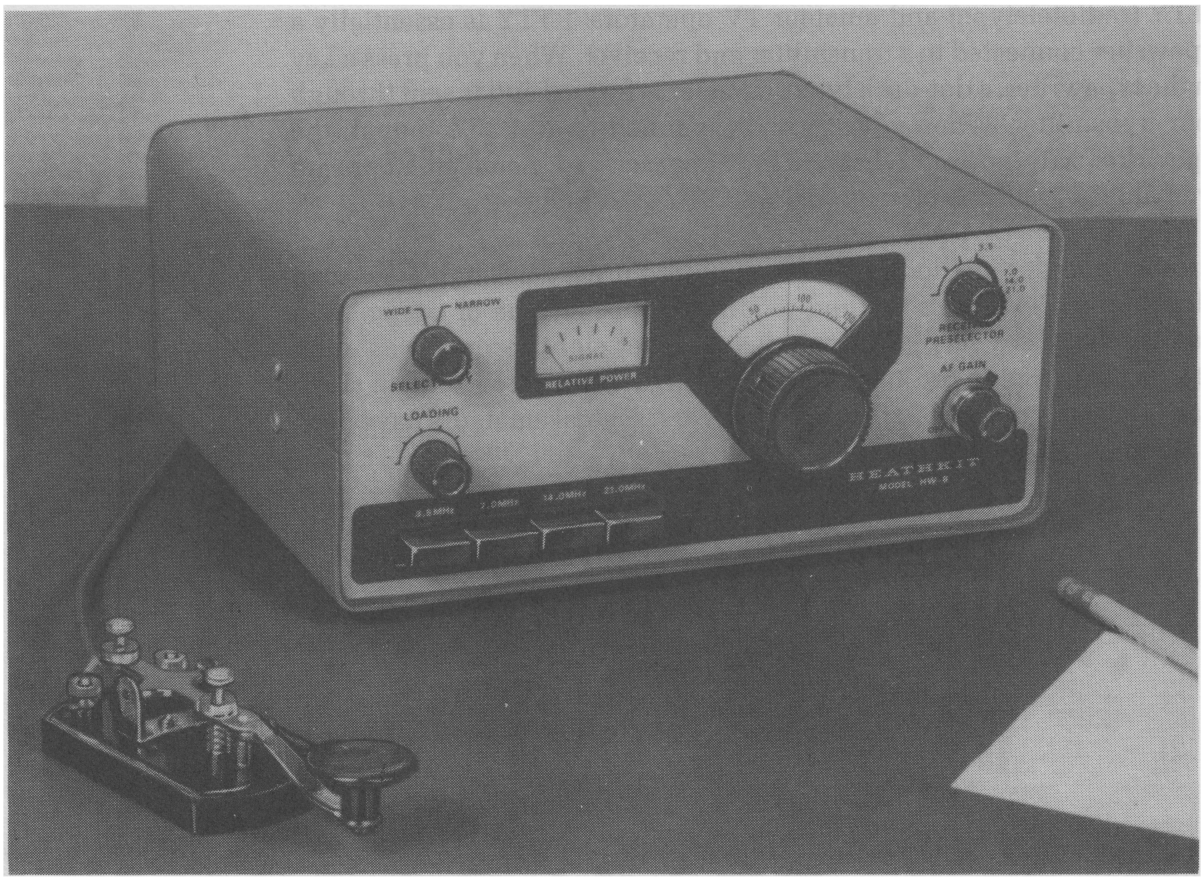

Figure 4
Simple Station

The antenna connected to your station may be anything from a simple long-wire antenna, hung between two trees, to a multielement rotary antenna on a tall tower. The last section of this Course gives detailed instructions so you can construct your own, simple, inexpensive antenna that is suitable for a beginner's station.

Figure 5
Elaborate Station

HOW TO USE THIS COURSE

The purpose of this Course is to teach you only what you need to know to pass the Novice examination. Electronics theory has been kept at a minimum.

A relatively new learning technique called "programmed instruction" is used throughout this Course. Programmed instruction has proven itself as an easy learning method that helps you retain what you learn. Each section, called a "module," is designed so you can skip over any areas that you already know.

Skim through Module 1 and note how it is organized. The first thing you find is a list of objectives that specifically tells you what you will learn. Next is a pretest. How well you do on this test will determine if you need to study this module or skip over it and go on to Module 2. Following the pretest is a short introduction that gives an overview of the information that is presented in the module. Next is the actual programmed instruction for this module.

The programmed instruction section of each module is broken down into numbered blocks called "frames." Some frames contain new information and have the important items in **bold** type. Other frames simply ask a question or review previous information. Most frames require you to answer a question. Many require you to fill in a blank, while others may ask you to choose a correct answer from a list, match two columns, or draw something. Immediately below each frame, in the shaded area, is the answer to the question asked in the frame. As you read each frame, cover the shaded area below the frame with a piece of paper. Answer the question in the frame as well as you can; then check the answer in the shaded area. If you answer a question incorrectly, go back and reread the frame to find out why your answer is wrong before you proceed to the next frame. NOTE: If you are asked to fill in a blank and you write in a word that has the same meaning as the answer given, your answer is acceptable.

At the end of each module is a multiple choice examination that will check your understanding and retention of the material in the module. Follow the instructions at the beginning of the examination.

After Module 9, there are two practice examinations which contain questions from each of the nine modules. Follow the instructions supplied with these examinations. The proceed to the "Final Examination."

INDIVIDUAL LEARNING PROGRAM IN AMATEUR RADIO

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COURSE OBJECTIVES

When you have completed this Course, you will be able to do the following:

1. Accurately send and receive the Morse code at the rate of five words per minute (25 letters per minute).

2. Pass a 20-question, multiple-choice test from the Federal Communications Commission that deals with the following subjects:

   A. Rules and Regulations.
   B. Radio Phenomena.
   C. Operating Procedures.
   D. Emission Characteristics.
   E. Electrical Principles.
   F. Circuit Components.
   G. Practical Circuits.
   H. Antennas and Transmission Lines.
   I. Radio Communication Practices.